



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

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February 12, 2020

Emily Boedecker, Commissioner
Vermont Department of Environmental Conservation
1 National Life Drive, Main 2
Montpelier, VT 05620-3520

Re: Review and Action on 2017 Revisions to Vermont Water Quality Standards, Environmental Protection Rule, Chapter 29A in accordance with Section 303(c)(3) of the Clean Water Act

Dear Ms. Boedecker:

By letter of January 6, 2017, the Vermont Department of Environmental Conservation ("VTDEC") submitted revisions to its Water Quality Standards ("WQS") to Region 1 of the U.S. Environmental Protection Agency ("Region" or "EPA") for review. The revisions were certified by the Vermont Attorney General's Office on January 3, 2017 as having been duly adopted pursuant to state law. EPA has completed its review of the revisions to the Water Quality Standards and the results of that review are described below.

We commend VTDEC for adopting many revisions to its water quality standards that strengthen the ability to protect Vermont's waters, such as revisions to the temperature criteria to protect fishing uses, revisions to many toxics criteria, and reclassifications of a number of waters to more protective classes.

EPA's review of VTDEC's WQS submission was limited to the provisions that are new or revised compared to the 2014 WQS, consistent with the authority provided in Section 303(c)(3) of the Clean Water Act ("CWA"). Pursuant to Section 303(c)(3) of the Clean Water Act and 40 C.F.R. Part 131, I hereby approve the following revisions:

Definitions (§29A-102)

- All changes to this section, including minor substantive and non-substantive changes and new definitions of equilibrium condition, flow characteristics, physical habitat structure, stream processes, and watershed.

Criteria (in accordance with 40 C.F.R. § 131.11)

- § 29A-302(1) - Update of temperature criteria to protect the designated uses of aquatic biota, wildlife, and aquatic habitat in fresh waters. Vermont's revised temperature criteria

are protective of the designated use and reflect EPA's guidance under Section 304(a) of the federal Clean Water Act (CWA) and EPA's 1986 Quality Criteria for Water¹.

- § 29A-306 – Use-specific Management Objectives and Criteria by Class
 - For B(1) waters, new numeric criteria for phosphorus in combination with appropriate response variables to protect the most sensitive uses of aesthetics in lakes and ponds and aquatic life in medium and high-gradient Wadeable streams. These criteria are identical to the criteria already in place for A(1) waters – the A(1) criteria have been extended to also apply to B(1) waters.
 - More detailed descriptions of the aquatic habitat management objectives and criteria applying to all water classifications. The additional detail includes reference to stream processes and flow characteristics for rivers and streams, and water levels for lakes and ponds.
- Appendices C and E - Revisions to the criteria for toxic substances for the protection of human health and aquatic life. These criteria are now consistent with EPA's 2015 updated guidance under Section 304(a) of the federal Clean Water Act (CWA) and EPA's 2016 aquatic life criteria for cadmium.

Water Classification Changes (in accordance with 40 C.F.R. § 131.10)

- Updates to § 29A-104 (a), (b) and (d) Classification of Water Uses.
- Establishment of a new class of waters -- B(1) -- with more protective criteria than the previous B class of waters, and the establishment of B(2) waters with the same criteria as those in place for the previous B waters.
- Appendix F - Reclassification of certain waters to A(1), the most protective class of waters.

Antidegradation Policy (in accordance with 40 C.F.R. § 131.12)

- All changes to § 29A-105 Antidegradation Policy, including addition of public notification and alternatives analysis procedures as required in EPA's updated WQS regulations as of 2015.

Appendix H Outstanding Resource Waters (ORWs)

- Creation of Appendix H and adoption into water quality standards of four ORWs.

Non-Substantive Edits

- All other changes to Rule 29A submitted on January 6, 2017 -- except to the sections specified below as not new/revised water quality standards -- including re-organization, formatting, and minor wording changes to improve clarity and conform with other changes to WQS not specifically detailed above.

¹ USEPA. 1986. Quality Criteria for Water 1986. Office of Water. Washington, D.C.. EPA 440/5-86-001.

Supporting Discussion of Approvals

§29A-102 New and Revised Definitions

New definitions for “Equilibrium condition,” “stream process,” “flow characteristics,” “physical habitat structure” and “watershed” have been added to §29A-102. Also, the definitions for “reference condition,” “natural flow regime,” and “riparian areas” have been updated.

These definitions provide the necessary information to apply and implement Vermont’s WQS. EPA approves these definitions because they are consistent with § 303(c) of the CWA and the implementation regulations at 40 C.F.R. Part 131.

Water Classification Changes (in accordance with 40 C.F.R. § 131.10)

Vermont’s Act 79 of 2016 authorized the establishment of a new class of waters – Class B(1), and indicated that uses may be designated upwardly from new Class B2 (the previous base classification for B waters) to B(1) or A(1). Accordingly, § 29A-306 has been amended to establish B(1) and B(2) waters in place of the previous B classification category. More protective criteria have been specified for B(1) waters than those specified for B(2) waters. The criteria specified for B(2) waters remain unchanged from the criteria previously specified for B waters. The net effect of these changes is that more protection is now in place for a portion of B waters (those now classified as B(1)) and there has been no change to the level of protection in place for the remainder of B waters (those now classified as B(2)).

Vermont also reclassified all surface waters in the Green Mountain National Forest’s (GMNF) Federally-designated Wilderness Areas and most surface waters in the GMNF National Recreation Areas from the less protective B(1) or B(2) to Class A(1) for aquatic biota and wildlife, aquatic habitat, aesthetics, swimming, boating and fishing uses. Additionally, three streams outside of these designated areas have been upgraded to Class A(1) for aquatic biota, aquatic habitat, and in limited instances, fishing uses. Finally, one stream in the Town of Ludlow has been reclassified from Class A(2) to A(1) for several uses. These reclassifications are approved because they are consistent with the Clean Water Act and implementing regulations at 40 CFR Part 131.

Criteria (in accordance with 40 C.F.R. § 131.11)

Revisions to Temperature Criteria to Protect Fishing Use in Coldwater Streams (§29A-302)

The revisions include changes to the water temperature criteria for cold water fish habitat in Class A(1) and B(1) waters for fishing. The previous version of the WQS included a single cold water criterion of no more than a 1°F increase in ambient temperature applied to all waters. The new version of the WQS changes this criterion, but only for A(1) and B(1) waters for fishing. For the A(1) waters, the new criterion is no increase in temperature from the natural condition. This new criterion is more stringent than the previous criterion and results in a higher level of protection for A(1) and B(1) waters.

For the B(1) waters, if the summer water temperature is below 68°F (as a rolling seven-day mean of maximum daily water temperatures between June 1 and September 30) the new criterion is that the total increase from ambient temperature due to all discharges and activities shall not exceed 1°F. If the stream summer water temperature is above 68°F, the new criterion is that there shall be no increase in temperature due to all discharges and activities. VTDEC has provided documentation showing that water temperatures no warmer than 68°F are necessary to protect native brook trout, which VT is using as an indicator species to identify thermally unimpacted and other high quality habitat.²

EPA finds that these changes are scientifically sound, protective of the most sensitive Vermont fish species and therefore protective of the aquatic biota, wildlife, and aquatic habitat designated uses.

Revisions to Criteria for Protection of Human Health and Aquatic Life (§29A, Appendices C and E)

Vermont has updated the State's human health criteria in Appendix C of the Vermont WQS to be consistent with EPA's current nationally recommended water quality criteria ("NRWQC") published in 2015.³ Also, in Appendix C, Vermont has updated its criteria for cadmium to be consistent with EPA's nationally recommended 2016 freshwater cadmium aquatic life criteria. This update reflects the latest science for the protection of aquatic life⁴.

EPA's review of Vermont's new and revised human health and aquatic life criteria is based on whether the criteria protect human health and aquatic life uses, including consideration of EPA's 2015 (for human health) and 2016 (for cadmium) NRWQC published pursuant to Section 304(a) of the CWA. EPA finds that the revised criteria are scientifically defensible and are protective of designated uses for the reasons explained in the EPA criteria documents for those pollutants.

Revisions to Management Objectives and Criteria for Aquatic Habitat (§29A-306(b))

Previously, management objectives and criteria were specified for an "aquatic biota, wildlife and aquatic habitat" use. In Vermont's 2017 WQS, this use was separated into an aquatic biota and wildlife use, and an aquatic habitat use. This change was made, in part, because Vermont DEC recognized that the biological integrity of fish and macroinvertebrate communities relies on the protection and maintenance of the aquatic habitat⁵. Additionally, separating these uses was necessary because combining the disparate measures of biological integrity with physical habitat measures into one set of use criteria made it difficult to implement management actions.⁶

² See memorandum entitled "Rationale for A1 & B1 temperature fishing criteria in 2017 Vermont Water Quality Standards" from Heather Pembroke, VTDEC to Eric Perkins, EPA Region 1, dated January 26, 2018.

³ See <http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#altable> for National Recommended Water Quality Criteria and access to criteria document.

⁴ USEPA. 2016. Ambient Water Quality Criteria, Cadmium-2016. Office of Water, Washington, D.C. EPA-820-R-16-002.

⁵ Vermont Department of Environmental Conservation, Watershed Management Division, 2016. Water Quality Standards Revisions-2016 Fact Sheet & Question and Answer.

⁶ Id.

The management objectives for the aquatic habitat use have been revised and expanded to include reference to physical habitat structure, stream processes, and flow characteristics for rivers and streams, and the physical character and water level of lakes and ponds. These changes provide greater clarity to the management objectives and align with the intent of Vermont State Law (Acts 110 and 138).

Consistent with the revisions to the management objectives for aquatic habitat, the revised criteria for each class are based on the relative amount of divergence from natural conditions of physical habitat structure, stream processes and flow characteristics for rivers and streams, and the physical character and water level of lakes and ponds. These expanded descriptions of the criteria for each class add detail and clarity. EPA finds that they also make the criteria more protective as stream processes, flow characteristics and water levels are all factors linked closely to habitat conditions in the scientific literature. These provide additional specificity on the requirements to maintain high quality habitat, including for the new class B(1) waters.

EPA approves these revisions based on a conclusion that these reference-based criteria protect the specified designated uses.

Phosphorus Criteria for Class B(1) and B(2) waters §29A-306, and Tables 2 and 3

Numeric criteria for total phosphorus, in combination with appropriate response variables to protect the most sensitive uses of aesthetics in lakes and ponds, and aquatic life in small and medium high gradient streams and rivers and warmwater medium gradient rivers and streams, have been specified for new Class B(1) and B(2) waters.

The total phosphorus criterion to protect the designated use of aesthetics in lakes, ponds and reservoirs (except for Lake Champlain and Lake Memphremagog) in newly established Class B(2) waters is equivalent to the original Class B criterion that EPA approved in September 2015.⁷ The Class B(1) total phosphorus criterion for protection of aesthetics in these waters is equivalent to the criterion in the original Class A(2), which was also previously approved in September 2015.⁸ The total phosphorous criteria to protect aquatic biota and wildlife in Class B(1) small and medium high gradient streams are equivalent to those criteria for the same gradient streams in Class A(1) and were previously approved by EPA in September 2015⁹. EPA is approving the criteria for the new Class B(1) and B(2) waters for the same reasons that we approved these criteria as protective of aquatic life for Class A and B waters in our September 2015 letter¹⁰.

A new total phosphorus criterion for Class B(1) warmwater, medium gradient streams, 21 µg/L, has been added to Vermont's WQS based on supporting documentation in VTDEC's technical support document, *Nutrient Criteria for Vermont's Inland Lakes and Wadeable Streams Technical Support Document* dated October 30, 2014 (Rev. 2016).

⁷ USEPA. 2015. Letter dated September 15, 2015 from Kenneth Moraff (Director, Office of Ecosystem Protection, USEPA Region 1) to Alyssa Schuren (Commissioner, Vermont Department of Environmental Conservation). September 9, 2015.

⁸ Id.

⁹ Id.

¹⁰ Id.

EPA approves the new Class B(1) total phosphorus criterion for warmwater, medium gradient streams and rivers because it is protective of aquatic life. Similar to EPA's September 2015 approval decision, EPA relied on information presented in VTDEC's technical support document as the basis for this approval decision.

Antidegradation Policy (in accordance with 40 C.F.R. § 131.12)

The revisions to the Antidegradation Policy at § 29A-105 include the addition of new public notification and alternatives analysis provisions to be consistent with the requirements in EPA's 2015 Water Quality Standards Regulatory Revisions (40 C.F.R. § 131.12). EPA finds that these additions to the VT WQS are consistent with the federal requirements related to public notification and alternatives.

Appendix H. Outstanding Resource Waters

Because Outstanding Resource Water designations were only listed in old individual Water Resources Panel decision files, Vermont included a new Appendix H to the WQS to list the four existing ORWs, and for purposes of designating future ORWs. Additionally, Vermont included a cross reference to the new Appendix H in § 29A-105(d) of the Antidegradation Policy for the protection of ORWs.

The antidegradation policy of Vermont's WQS includes an ORW provision at § 29A-105(d), which is the State's equivalent of the federal antidegradation policy's Outstanding National Resource Water (ONRW) provision at 40 CFR 131.12(a)(3). The federal ONRW provision is the highest level of protection in the federal antidegradation policy and provides that the water quality of ONRWs is to be maintained and protected. EPA has interpreted this prohibition on degradation in ONRWs to mean no new or increased discharges to ONRWs or tributaries to ONRWs that would result in lower water quality (Water Quality Standards Handbook, EPA-823-B-12-002, section 4.7; and 63 FR 36742, 36785-87). The only exception to this prohibition on degradation in ONRWs is for temporary and short-term changes in the water quality that are consistent with protecting the existing uses and meeting water quality criteria that are applicable to the waters (Water Quality Standards Handbook, EPA-823-B-12-002, section 4.7; and 48 FR 51400, 51403).

Pursuant to section 303(c) of the CWA and 40 CFR Part 131, EPA is approving the addition of Appendix H and four surface waters designated as ORWs; Batten Kill, Pike's Fall/Ball Mountain, Poultney River and Great Falls, Ompompanoosuc River. EPA approves the addition of these ORWs to the 2017 WQS as being consistent with 40 CFR 131.12(a)(3), which provides for assigning waters an ONRW level of protection.

Revisions that are not WQS and do not Require an EPA Decision

EPA is not taking action pursuant to Section 303(c) of the CWA on the following revisions, since these provisions relate to requirements associated with other areas of the water program,

including the processes, policy, management, planning and assessment procedures, rather than elements of Section 303(c) of the CWA relating to water quality standards.

EPA has determined that revisions to the following sections of Chapter 29A are not new or revised water quality standards requiring EPA review and approval or disapproval:¹¹

- § 29A-104(c), Classification of Water Uses, which references the procedures for adopting, amending, or repealing a use reclassification rule.
- § 29A-203, Nonpoint Source Pollution, which describes the policy and management practices and planning requirements needed to achieve compliance with the WQS.
- Appendix G, Application of Biocriteria for Fish and Macroinvertebrate Communities in Vermont Wadeable Streams and Rivers, which describes the procedures for the collection and analysis of fish and aquatic macroinvertebrate community data used to determine compliance with the class-specific narrative criteria included in § 29A-306(a) of these rules.

Endangered Species Act

EPA's approval of new aquatic life water quality standards (WQS) is subject to the consultation requirement of Section 7(a)(2) of the Endangered Species Act (ESA). Under Section 7(a)(2) of the ESA, 16 U.S.C. § 1536, EPA has the obligation to ensure that its approval of these new or revised WQS will not jeopardize the continued existence of threatened or endangered species and their critical habitat in Vermont.

On January 16, 2020, the U.S. Fish and Wildlife Service (USFWS), New England Field Office concurred with EPA's finding that approval of Vermont's revised cadmium, temperature, and total phosphorus criteria is not likely to adversely affect listed species under its jurisdiction.

We look forward to continued cooperation with Vermont in the development, review and approval of water quality standards pursuant to our responsibilities under the Clean Water Act. Please contact Ralph Abele (617-918-1629) if you have any questions.

Sincerely,



Ken Moraff, Director
Office of Ecosystem Protection

cc: Pete LaFlamme, VT DEC
Thomas Chapman, USFWS

¹¹ See *What is a New or Revised Water Quality Standard Under CWA 303(c)(3)? - Frequently Asked Questions*, EPA Publication 820F12017, October 2012.

